AMENDMENTS TO THE CLAIMS:

LISTING OF CLAIMS:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-12 (Canceled).

13. (Withdrawn) A method of detecting the presence of 2,4-dimethylphenol in a test sample, comprising

(a) culturing *Pseudomonas or Escherichia coli* bacteria in the presence of the test sample, said bacteria containing a DmpR gene and a reporter gene under the control of a promoter inducible by DmpR, said DmpR gene containing a mutation in the sensor domain conferring an enhanced transcriptional activation response to 2,4- dimethylphenol relative to wild type DmpR, and

(b) detecting the expression of the reported gene,

wherein the expression of the reporter gene provides an indication of the presence of 2,4-dimethylphenol in the test sample.

14. (Withdrawn) The method according to claim 13, wherein the DmpR mutant is DmpR-B31.

15. (Withdrawn) A method of detecting the presence of 2-nitrophenol in a test sample, comprising

(a) culturing *Pseudomonas or Escherichia coli* bacteria in the presence of the test sample, said bacteria containing a DmpR gene and a reporter gene under the control of a promoter inducible by DmpR, said DmpR gene containing a mutation in the sensor domain conferring an enhanced transcriptional activation response to 2-nitrophenol relative to wild type DmpR, and

(b) detecting the expression of the reported gene,

wherein the expression of the reporter gene provides an indication of the presence of 2-nitrophenol in the test sample.

16. (Withdrawn) The method according to claim 15, wherein the DmpR mutant is DmpR-D9.

17. (Withdrawn) A method of detecting the presence of 4-nitrophenol in a test sample, comprising

(a) culturing *Pseudomonas or Escherichia coli* bacteria in the presence of the test sample, said bacteria containing a DmpR gene and a reporter gene under the control of a promoter inducible by DmpR, said DmpR gene containing a mutation in the sensor domain conferring an enhanced transcriptional activation response to 4-nitrophenol relative to wild type DmpR, and

(b) detecting the expression of the reported gene,

wherein the expression of the reporter gene provides an indication of the presence of 4-nitrophenol in the test sample.

18. (Withdrawn) The method according to claim 17, wherein the DmpR mutant is DmpR-B31.

19. (Withdrawn) A method of detecting the presence of phenol in a test sample, comprising

(a) culturing *Pseudomonas or Escherichia coli* bacteria in the presence of the test sample, said bacteria containing a DmpR gene and a reporter gene under the control of a promoter inducible by DmpR, said DmpR gene containing a mutation in the sensor domain conferring an enhanced transcriptional activation response to phenol relative to wild type DmpR, and

(b) detecting the expression of the reported gene,

wherein the expression of the reporter gene provides an indication of the presence of phenol in the test sample.

20. (Withdrawn) The method according to claim 19, wherein the DmpR mutant is DmpR-B9.

21. (Cancelled)

22. (Withdrawn) An isolated polynucleotide consisting of a nucleotide sequence selected from the group consisting of SEQ ID NOS. 1 - 7, and complementary sequences thereof.

23. (Withdrawn) A polynucleotide vector comprising the polynucleotide according to claim 22.

24. (Withdrawn) A host cell containing the vector of claim 23.

25-29. (Cancelled).

30. (New) A method for detecting 2-chlorophenol or 2,4-dichlorophenol in a test sample, wherein said method comprises the steps of:

(1) culturing a *Pseudomonas* or *Escherichia coli* cell comprising (a) a reporter gene under the control of the Po promoter inducible by the DmpR protein of *Pseudomonas sp.* strain CF600, and (b) a *Pseudomonas sp.* strain CF600 DmpR gene mutated at the coding region of the sensor domain, wherein the coding region of the sensor domain of the mutated *Pseudomonas sp.* strain CF600 DmpR gene comprises SEQ ID NO: 3, and wherein said mutation results in enhanced transcriptional activation response to 2-chlorophenol and 2,4-dichlorophenol relative to the response obtained with wild type *Pseudomonas sp.* strain CF600 DmpR protein; and,

(2) detecting the expression of the reporter gene, wherein expression of the reporter gene is indicative of the presence of 2-chlorophenol or 2,4-dichlorophenol.